

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-27. (Cancelled).

28. (New) A system for allowing multi-modal access of content over a global data communications network using a mobile station (MS) with a user agent, a proxy server, and a telephony platform, wherein:

said mobile station is a dual mode station supporting concurrent voice and data sessions;

said proxy server comprises an enhanced functionality for supporting voice browsing;

said telephony platform comprises an Automatic Speech Recognizer (ASR) and is operative to convert text messages to speech;

key elements are predefined and indicated in the original web content; and

when the proxy server recognizes/extracts said key elements, using predefined rules, it triggers voice browsing, such that arbitrary web content can be accessed by voice commands without requiring conversion of the web content.

29. (New) The system according to claim 28, wherein multi-modal browsing is implemented.

30. (New) The system according to claim 28, wherein the proxy server parses an accessed web content with regard to said key elements.

31. (New) The system according to claim 28, wherein the accessed web content is browsed by means of key strokes or mouse clicks.

32. (New) The system according to claim 28, wherein said system allows for voice-based access of any tag based content.

33. (New) The system according to claim 28, wherein the user of the mobile station uses a key element indicated in the web content to select a specific hyperlink.

34. (New) The system according claim 28, wherein the voice browsing functionality of the proxy server implements keyword spotting.

35. (New) The system according to claim 28, wherein the proxy server interfaces with the Automatic Speech Recognizer which comprises a medium size vocabulary speech recognizer.

36. (New) The system according to claim 28, wherein the predefined rules for voice key element extraction are syntactic rules.

37. (New) The system according to claim 28, wherein the predefined rules for voice key element extractions are simple rules relating to selection of a unique keyword in the name of a hyperlink.

38. (New) The system according to claim 28, wherein the predefined rules for voice key element extraction are numeric rules numbering hyperlinks in said web content.

39. (New) The system according to claim 28, wherein the proxy server forwards text prompts to a text-to-speech function in the telephony platform, wherein the text messages are converted to speech and forwarded to the user over the voice channel set up by the proxy server.

40. (New) The system according to claim 28, wherein between the conventional browser in the user agent and the speech browser in the proxy server a synchronization engine is provided.

41. (New) The system according to claim 40, wherein the proxy server comprises a pushing mechanism for making the MS user agent refresh indicated, fetched content.

42. (New) The system according to claim 41, wherein a semaphore object is introduced into the content returned to the proxy server for indicating activation or not of content refresh.

43. (New) The system according to claim 28, wherein a connection is established between the proxy server and the Automatic Speech Recognizer of the telephony platform for specifying and identifying a called application to be accessed.

44. (New) The system according to claim 43, wherein the proxy server comprises a number of subscriber records, and in that for each subscriber for which voice browsing should be supported, means for indication of voice browsing activation, optional key element for triggering voice browsing or optional hyperlink name, for insertion in accessed web content, and which, when selected, provides for establishment of a voice channel between the ASR and the mobile station.

45. (New) The system according to claim 43, wherein if voice browsing is activated, the access request is forwarded from the proxy server to the relevant Application Service Provider, which returns the requested content to the proxy server, and in that said proxy server comprises parsing and analyzing means for finding and indicating key elements, before forwarding the content as modified to the mobile station.

46. (New) The system according to claim 28, wherein a request for voice browsing includes at least a voice browsing session ID and MSISDN of the user station.

47. (New) The system according to claim 46, wherein for a user authenticated by the proxy server, a voice channel is established, concurrent with a data session channel, between the ASR and the mobile station.

48. (New) The system according to claim 45, wherein keywords as recognized in voice commands from the end user are provided to the proxy server, and in that the proxy server comprises matching means for matching recognized voice commands with stored key elements, for finding the relevant link on which to send a request to the Application Service Provider, and in that the requested content, upon reception in the proxy server, is parsed, analyzed and pushed to the user agent.

49. (New) The system according to claim 39, wherein for synchronization between the user agent of the mobile station and the proxy server, a client semaphore object is introduced, by the proxy server, into the original content of which the original copy is stored in said server, and activated when voice browsed content is to be pushed to be mobile station.

50. (New) The system according to claim 49, wherein the client semaphore object is periodically updated with the value of the semaphore object in the proxy server.

51. (New) The system according to claim 50, wherein, in the user agent, a script downloaded with original content continuously checks the client semaphore object to establish if a content refresh is required and, in the proxy server, a script is used to activate the proxy semaphore object.

52. (New) The system according to claim 50, wherein the client semaphore object is created using a WML script variable, fetched from the proxy server, and, in the proxy server, a first and a second version of said script is stored, the first version comprising a script for semaphore activation, the second version comprising a script indicating semaphore inactive.

53. (New) A method for providing concurrent multi-modal access of global data communication networks from a dual mode mobile station, comprising the steps of:

- providing a proxy server with functionality for voice browsing;
- defining rules for keyword extraction from a browsed content and keywords/key elements;
- indicating the keywords in the original content;
- based on said indication of keywords, end user selection of a keyword to select a specific hyperlink such that arbitrary web content can be accessed by voice without requiring conversion of the original content.

54. (New) A method for providing concurrent multi-modal access of Internet content from a dual mode mobile station, said method comprising the steps of:

- providing an enhanced functionality proxy server supporting voice browsing;
- establishing a connection between the enhanced proxy server and a telephony platform with an Automatic Speech Register (ASR);
- defining key elements to use for voice browsing;
- determining if voice browsing is to be active and, if so, performing the steps of:
 - setting up a voice channel between the mobile station and the Automatic Speech Register;
 - forwarding a request to the concerned application service provider;
 - parsing content and analyzing paragraphs in the content to find key elements;
 - modifying, in the enhanced proxy, the content by changing tag attributes to make key elements identifiable to the user;
 - sending the modified content to the mobile station;
 - opening a voice browsing session;
 - opening a voice channel concurrent with a data session channel;
 - matching, in the enhanced proxy server, keywords recognized in a user voice command with predefined and selected keywords to establish which link to use for sending a get request to the relevant application service provider; and,

processing and pushing the content received from the application service provider to the user agent.